

Groenlo, 13 September 2015

## Declaration on radiation safety standard conformance

Return address: PO Box 6, 7140 AA Groenlo, The Netherlands

American Certification Body  
 Certification Department  
 6731 Whittier Avenue, Suite C110  
 McLean, Virginia 22101  
 USA

We, N.V. Nederlandsche Apparatenfabriek "Nedap", declare that the following product:

Description : Long-range vehicle and driver identification tag operating on 433 MHz and 13.56 MHz  
 This calculation is for the 433 MHz part.  
 FCC ID : CGDBOOSTER10  
 Manufacturer : N.V. Nederlandsche Apparatenfabriek "Nedap"  
 Brand : Nedap  
 Model : SMARTCARD BOOSTER ULTIMATE

The measured field strength at 433 MHz is 72.59 dBµV/m @ 3 m distance.

$$E_{lim} = 20 \times \log_{10}\left(\frac{\sqrt{30P_{lim}}}{d}\right) + 120$$

Where:

$E_{lim}$  = electric field strength limit, in dB (µV/m)  
 $P_{lim}$  = EIRP limit, in watts  
 $d$  = measurement distance, in meters

$$72.59 = 20 \log_{10}\left(\frac{\sqrt{30P_{lim}}}{3}\right) + 120 \gggg - 47.41 = 20 \log_{10}\left(\frac{\sqrt{30P_{lim}}}{3}\right) \gggg -2.371 = \log_{10}\left(\frac{\sqrt{30P_{lim}}}{3}\right)$$

$$0.0043 = \frac{\sqrt{30P_{lim}}}{3} \gggg P_{lim} = 6 \mu W$$

has a rated RF power of 6 µW, which means that the worst case prediction of power density (100% reflection) at 20 cm distance (worst case) can be calculated as follows:

$$S = \frac{EIRP}{4 * \pi * R^2} \quad (\text{power density without reflection})$$

$$S = \frac{2^2 * EIRP}{4 * \pi * R^2} \quad (\text{power density with 100% reflection})$$

$$S = \frac{2^2 * EIRP}{4 * \pi * R^2} = \frac{0.006mW}{\pi * (20cm)^2} = 0.005 \mu W/cm^2 \quad (\text{Limit} = 457 \mu W/cm^2)$$

Yours Sincerely  
 N.V. Nederlandsche Apparatenfabriek "Nedap"

Jacques A.M. Hulshof  
 Approbation officer

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